

Lunar Halos.—1st, Ohio, Va.; 2nd, Tex., N. C.; 3rd, Neb., Utah, Tex., Miss., Tenn., N. C.; 4th, Oregon, Utah; 7th, Neb.; 10th, Tenn.; 12th, Ohio, Iowa; 13th, Ind.; 14th, Ill.; 23rd, Tex.; 24th, Fla., Va.; 25th, Mo.; 26th, Iowa, Ind., Fla.; 27th, Tex., Iowa, N. Y., Fla., Ohio; 28th, Ind. Ty., Neb., Utah, Tex., La., Va., Idaho; 29th, Ind. Ty., Utah, Wis., N. Y., Kan., Mo.; 30th, Ala., Wis., Fla., Kan.

Mirage.—Breckenridge, Minn., 21st; Duluth, Minn., 17th; Oswego, N. Y., 24th; Cape May, 6th.

MISCELLANEOUS PHENOMENA.

BOTANICAL.—Pembina, Dak., 5th, lettuce and radish in market; 18th, wild strawberries ripe; 20th, asparagus and new potatoes in market. Breckenridge, Minn., 24th, wheat and oats heading. Chattanooga, Tenn., 25th, peaches ripening. Augusta, Ga., ripening, 4th, blackberries; 7th, figs; 21st, peaches and tomatoes: cotton blooming, 11th. Cadistoga, Cal., wild flowers seeding 14 days later, and grapes in bloom 3 weeks later than last year. Houston, Fla., ripe, 1st, watermelons; 10th, tomatoes. Milton, Fla., ripe, 1st, peaches; 15th, apples; 20th, green corn in market. Augusta, Ill., in bloom, 21st, elder; 22nd, chestnut; 25th, corn tasseling. Manitowoc, Wis., 30th, crops look well. Prof. Hiprich, in the Iowa Weather-Service, reports the condition of the crops as follows: Corn, about 5 per cent. below average on western slope, also, in middle, north and western southwest; 5 to 10 per cent. above, down the Upper Des Moines and Raccoon and southwest to Page and Decatur counties; from 3 to 6 per cent. above between Turkey and Cedar rivers, and equal to average in the north and Middle. Wheat from 20 to 40 per cent. below average in middle east, from 10 to 20 per cent. in middle north, and on western slope, except in Plymouth Co., where grasshoppers have almost completely destroyed the crops. Hay and pasture have improved during month. Arlington, Ind., in bloom 23rd, elder. Vail, Ia., 30th, all small grain very thin, nearly all headed out, corn doing well, prairie grass very light. Nora Springs, Ia., 25th, raspberries ripening. Independence, Ia., 30th, crops looking very well. Holton, Kan., 30th, continued rain injuring wheat. Creswell, Kan., 13th, oats heading. Independence, Kan., 15th, blackberries ripe. Brookhaven, Miss., 12th, cotton blooming; corn tasseling from 7th to 26th. Clear Creek, Neb., 24th, wheat headed. Statesville, N. C., 30th, wheat and oat crops very good, cotton and corn very promising. Fayetteville, N. C., 6th, corn tasseling.

Harvesting.—Ft. Gibson, Ind. Ty., 24th, oats; Uvalde, Tex., 4th, grain; Breckenridge, Wis., 11th, hay; Wytheville, Va., 21st, wheat—grain and grass both light; Highland, Ill., 11th, first wheat; Vevay, Ind., 17th, wheat; crops excellent; Arlington, Ind., 21st, harvesting begun; Guttenburg, Ia., 26th, wheat; Ft. Madison, Ia., 26th, wheat; Creswell, Kan., 10th, harvesting begun; 29th, fall wheat cut; Independence, Kan., 9th, wheat; Fallston, Md., 23rd, wheat; Ashley, Mo., 16th, wheat; crops good; 30th, oats—yield light; Fayetteville, N. C., 5th, wheat harvesting general; crop very good; Ringgold, O., 30th, wheat crop very good; Jacksonburg, O., 9th, barley; 21st, wheat; North Lewisburg, O., 30th, harvest begun; Bethel, O., 20th, wheat—injured by fly; Wooster, O., 26th, wheat.

Rot.—Highland, Ill., slight rot in grapes appeared on 14th, but on 30th seemed to have disappeared.

BIRDS.—*Geese*.—Cairo, Ill., 27th, wild geese going south.

MISCELLANEOUS.—*Grasshoppers*.—Winnemucca, Nev., 2nd, myriads invaded town from the north; 4th, in great numbers; 5th, a few still in vicinity; 9th, a swarm passed in easterly direction; 15th, 29th, a few seen. Salt Lake City, 2nd, reported to be in large numbers on east and west "bench lands." Yankton, Dak., 8th, dense swarms, moving SW.; 26th, moving southward. Fort Fetterman, Wyo., 14th, "myriads of grasshoppers cover ground." Clear Creek and Genoa, Neb., from 24th to 29th. Iowa, 30th, "grasshoppers have done much damage in the northwest of State, and even down to Woodbury Co." *Locusts*.—Fort Stephenson, Dak., disappeared on 24th. Augusta, Ga., 19th, first appearance. Independence, Kan., disappeared on 25th. Emory Grove, Md., 20th to 23rd. Oregon, Mo., locusts continued in full force until 18th, when they began dying rapidly. Plattsmouth, Neb., appeared May 27th, and on June 11th developed to immense numbers, depositing eggs; 18th, dying of rapidly; 21st, almost disappeared. Cincinnati, Ohio, first heard, 24th. Norwalk, Ohio, 13th. Melissa, Tex., 2nd, in abundance. Coalville, Utah, 30th, flying S. and SE., very high.

Meteors.—Leavenworth, 12th, from N-NE. at elevation of 45° to 50°; in falling curved towards the NE. for about 20° and then exploded with a loud noise, scattering in all directions; appeared to be about 6 in. in diameter and was exceedingly bright. At Larned, Kan., a brilliant meteor was observed on the evening of the 18th, a few moments after sunset, remaining visible about eight or ten seconds; position 25 or 30 degrees above horizon, with "no apparent motion, consequently it must have been approaching the earth directly in the line of spectators;" apparent diameter, 1½ degrees; tail irregular and nearly perpendicular to horizon, length about 20 degrees, breadth about 30 degrees. 25th, on Cut Creek, 24 miles west of Alamosa, Col., shortly before sunrise, large pear-shaped meteor "fell straight down from vicinity of Jupiter; it threw out spark plainly visible in broad daylight; seemed to strike the ground not more than half a mile away; color, pale white." It is reported that the recent earthquake at Virginia City, Nev., was not felt in the lower levels of the mines in that region.

Polar Bands.—Cape Hatteras, 17th; Wytheville, Va., 1st, 13th, 15th, 16th, 18th, 21st.

Prairie and Forest Fires.—Los Angeles, Cal., 2nd. Colorado Springs, Col., 25th; mountain fires in SW. Cape Hatteras, N. C., 24th. Summit, Col., 30th, during most of month three large forest fires have

been raging from 10 to 20 miles south of this place, and are advancing rapidly east under strong winds. Johnstown, Va., 22nd.

Zodiacal Light.—Colorado Springs and Pikes Peak, Col., looked for each day but not observed. Lynchburg, Va., 7th, 10th, 11th, 12th, 16th. Mt. Washington, looked for each day, none observed.

Earthquakes.—January 8th, 1879, Amoy, China, 9.47 p. m., shock; 30th, at Colima, Mexico, between 10 and 11 a. m., strong shock, during which the fish in the lake rose to the surface in great numbers. February 2nd, Tokio, Japan, 10.10 p. m., shock. April 4th, 3.36 a. m., strong shock at Zi-Ka-wei and Nankin, China. U. S. Naval Hospital, Yokohama, Japan, April 9th, 2.30 a. m., light shock; 14th, 9.20 a. m., light shock; May 10, 11.18 p. m., light shock. The *Colonist*, published at St. George's, Bermuda, of May 28th, reports "a rather heavy shock of earthquake there on the afternoon of Sunday, the 28th?, (probably the 25th,) at 5.30 p. m. Two chimneys and walls were thrown down. Reports from St. Croix, St. John, Porto Rico, and Tortola all mention heavy shocks at those places about the same hour, at latter place a house was badly damaged." San José, Costa Rica, May 29th, 6.30 p. m., severe shock; 30th, 1.30 a. m., severe shock; these shocks seemed to be general throughout the Republic; in San José, Alajuela and Grecia buildings were damaged. At Puntarenas a violent thunder-storm prevailed at the hour of the first shock; light shocks were also felt at Aspinwall and Panama on the 29th. On June 11, earthquake shocks were felt in Canada and reported as follows: Montreal, "9.58 p. m., sharp shock felt all over city, accompanied by a sharp rattle, as of near thunder; it seemed to pass from N. to S." St. Johns, Quebec, night, "heavy shock of earthquake, accompanied by a rumbling sound."

Ocean Current.—"Lieut. Com. Crownenshield, U. S. Steamer Portsmouth, at Port Royal, May 25th, from Hampton Roads, reported having found the Gulf Stream exceptionally near the coast and running at an unusually high velocity. At Capes Lookout and Hatteras it was less than three miles from the shoals and so strong and swift as to carry the ship fifty-six miles to northeastward during a calm of fourteen hours, or at a rate of four knots per hour."

Sunsets.—The characteristics of the sky at sunset as indicative of fair or foul weather for the succeeding 24 hours have been observed at all Signal Service stations. Reports from 126 stations show 3774 observations to have been made, of which 40 were reported doubtful; the remainder 3082, or 82.6 per cent. were followed by the expected weather.

Sun Spots.—The following record of observations, made by D. P. Todd, Assistant, has been forwarded by Prof. S. Newcomb, U. S. Navy, Superintendent Nautical Almanac, Washington, D. C.:

DATE— JUNE, 1879.	No. of new—		Disappeared by solar rotation.		Reappeared by solar rotation.		Total number visible.		REMARKS.
	Groups	Spots	Groups	Spots	Groups	Spots	Groups	Spots	
4th, 3 p. m.	1	5	0	0	0	0	1	5	Faculae.
4th, 4 p. m.	0	0	0	0	0	0	1	5	Faculae.
5th, 3 p. m.	1	3	0	0	1	3	2	8	Faculae.
7th, 2 p. m.	0	0	0	0	0	0	0	0	
8th, 4 p. m.	0	0	0	0	0	0	0	0	Faculae.
6 p. m.	0	0	0	0	0	0	0	0	Faculae.
9th, 4 p. m.	1	4	0	0	0	0	1	4	Faculae.
10th, 2 p. m.	0	0	0	0	0	0	1	1	} Spot circular and well-defined.
4 p. m.	0	0	0	0	0	0	1	1	
20th, 2 p. m.	1	5	0	0	0	0	1	5	
27th, 2 p. m.	0	0	0	0	0	0	1	4	
28th, 2 p. m.	0	4	0	0	0	0	1	8	
30th, 2 p. m.	0	2	0	0	0	0	1	10	

Observations were also made on the 2nd at 3 p. m., 12th at 2 p. m., 13th at 2 p. m., 14th at 2 p. m., 15th at 6 p. m., 17th at 2 p. m., 18th at 3 p. m., 20th at 3 p. m., 21st at 2 and 5 p. m., 23rd at 2 and 4 p. m., and on the 24th at 3 p. m., but no spots seen at those hours. Mr. Wm. Dawson, of Spiceland, Ind., reports the following observations:—3rd, 7th, 8th, 9th, 11th, 12th, 14th, 16th, 17th, 19th, 20th, 23rd, 24th, 25th, no spots; 4th, 3 spots, one group, about half way from the centre to north edge; 5th, four spots, one quite prominent; 10th, two spots, about 9' from east edge; 27th, fourteen spots in one group, 4 quite prominent, near centre of southeast quadrant; 29th, thirty spots, one group, 4 spots very prominent; 30th, thirty-seven spots in one large group, one spot large, part of group much compressed, one spot and large faculae very near east edge of sun. Mr. David Trowbridge, Waterburgh, N. Y., "observed the sun on the 5th, 6th, 7th, 8th, 9th, 10th, 13th, 14th, 15th, 16th, 17th, 19th, 20th, 22nd, and 24th, no spots; 29th and 30th, a group of 3 towards the western margin; July 1st, only 2 spots in the group." Mr. F. Hess reports "at Alamosa, Col., observed sun's disc (through a glass with a power of 50) on June 2nd, 3rd, 4th, 5th, 7th, 8th, 9th and 10th and saw no spots; on the 5th at 6 a. m. distinctly saw small, perfectly round and intensely black spots about equidistant between upper and lower limb and about one-third the sun's diameter from the 2nd (following) limb,—at noon it had disappeared; on the 20th at the headwaters of Alamosa creek, about 4 p. m., saw two large oblong spots near the northeastern limb; 27th, same place, morning, two groups, upper one composed of two large spots and lower one of three smaller spots; 28th, headwaters of San Juan, eight spots in two groups and three seemed to be a number of others which his glass did not resolve into distant spots; 30th, same place, morning, eight spots in two groups. Prof. Gustavus Hinrichs, "no sun spots were seen, but the sun was examined on 12 days only." Observations were made at Fort Whipple, Va., between 10 and 11 a. m. each day, but no spots seen.